ABSTRAK

PENGEMBANGAN INSTRUMEN *THREE TIER DIAGNOSTIC TEST* UNTUK MENGIDENTIFIKASI MISKONSEPSI PESERTA DIDIK PADA MATERI GELOMBANG BUNYI

Oleh

LIFTIA AULY ERIZKA PUTRI

Penelitian ini bertujuan untuk mengembangkan instrumen *Three Tier Diagnostic Test* yang valid, reliabel, dan praktis untuk mengidentifikasi miskonsepsi peserta didik pada materi gelombang bunyi. Desain pengembangan dilaksanakan menggunakan metode *Research and Development* dengan 6 langkah pengembangan mengadaptasi dari Borg & Gall (1983) yang meliputi tahap penelitian dan pengumpulan data, perencanaan, pengembangan produk awal, uji coba lapangan awal, revisi hasil uji coba, dan uji coba lapangan. Validasi produk dilakukan oleh dua dosen dan satu guru untuk menilai aspek konstruk, materi, dan bahasa. Berdasarkan hasil validasi ahli instrumen penilaian sebesar 85,5% dengan kategori sangat valid sehingga layak digunakan. Instrumen *Three Tier Diagnostic Test* untuk mengidentifikasi miskonsepsi peserta didik pada materi gelombang bunyi diujicobakan kepada 20 peserta didik dan dianalisis menggunakan *Rasch Model* dengan berbantuan *software Ministep 5.9.2.* Berdasarkan hasil analisis data uji coba diperoleh sebanyak 15 butir soal instrumen *Three Tier Diagnostic Test* dinyatakan valid. Hasil uji reliabilitas diperoleh nilai *person reliability* sebesar 0,84 dengan kategori bagus, *alpha Cronbach* sebesar 0,86 dengan kategori bagus sekali, dan *item reliability* sebesar 0,78 dengan kategori cukup. Uji kepraktisan instrumen *Three Tier Diagnostic Test* pada materi gelombang bunyi mendapatkan rata-rata keseluruhan persentase sebesar 92,7% dengan kategori sangat praktis. Hasil analisis miskonsepsi tertinggi terjadi pada subkonsep gelombang bunyi pada dawai 52,5% dengan kategori sedang dan miskonsepsi terendah pada subkonsep efek doppler 30% dengan kategori sedang. Produk akhir instrumen *Three Tier Diagnostic Test* untuk mengidentifikasi miskonsepsi peserta didik pada materi gelombang bunyi yang dikembangkan telah memenuhi standar kelayakan instrumen yaitu valid, reliabel, dan praktis.

Kata kunci: Gelombang Bunyi, Instrumen *Three Tier Diagnostic Test,* Miskonsepsi

ABSTRAK

THE DEVELOPMENT OF A THREE TIER DIAGNOSTIC TEST INSTRUMENT TO IDENTIFY STUDENTS' MISCONCEPTION IN SOUND WAVE TOPIC

By

LIFTIA AULY ERIZKA PUTRI

This study aims to develop a valid, reliable, and practical Three Tier Diagnostic Test instrument to identify students' misconceptions about sound wave material. The development design was implemented using the Research and Development method with six development steps adapted from Borg & Gall (1983), which include the research and data collection stage, planning, initial product development, initial field testing, revision of test results, and field testing. Product validation was conducted by two lecturers and one teacher to assess the construct, content, and language aspects. Based on the expert validation results, the assessment instrument achieved a validity rate of 85.5%, categorized as highly valid and suitable for use. The Three Tier Diagnostic Test instrument for identifying students' misconceptions about sound wave material was pilot-tested on 20 students and analyzed using the Rasch Model with the assistance of Ministep 5.9.2 software. Based on the results of the pilot test data analysis, 15 items of the Three Tier Diagnostic Test instrument were declared valid. The reliability test results obtained a person reliability value of 0.84, categorized as good, a Cronbach's alpha of 0.86, categorized as very good, and an item reliability of 0.78, categorized as sufficient. The practicality test of the Three Tier Diagnostic Test instrument on sound wave material obtained an overall average percentage of 92.7% with a very practical category. The highest misconception analysis results occurred in the subconcept of sound waves on strings at 52.5% with a moderate category and the lowest misconception in the subconcept of the Doppler effect at 30% with a moderate category. The final product of the Three Tier Diagnostic Test instrument for identifying students' misconceptions on sound wave material that was developed has met the instrument validity standards, namely valid, reliable, and practical.

Keywords: Sound WaAqves, Three Tier Diagnostic Test Instrument, Misconceptions